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TABLE OF CONTENTS.

PAGE.

Editorial Articles:—Why We Need Skilled Foresters 131
The Farm Home Reading Circle 131
The White Pine in the West.....*Professor Charles A. Keffer.* 132
Marketing Apples.....*George A. Cochrane.* 132
Foreign Correspondence:—London Letter.....*W. Watson.* 133
New or Little-known Plants:—Mimulus Clevelandi. (With figure.) *T. S. Brandegee.* 134
Plant Notes..... 134
Cultural Department:—Some Flowering Plants for Easter.....*W. N. Craig.* 136
Japanese Anemones.....*T. D. H.* 136
Snowdrops, New and Old.....*J. N. Gerard.* 137
The Cherry Fruit Mold .....*Professor Byron D. Halsted.* 137
Yellow-fruited Tomatoes.....*F. A. Waugh.* 138
Onosma stellulatum.....*E. O. Orpet.* 138
Lettuce for Forcing.....*William Scott.* 138
Correspondence:—Oranges in Southern Mississippi.....*G. T. Drennan.* 138
A Large Grapevine .....*J. H. Mellichamp, M.D.* 139
Exhibitions:—Spring Flower Show in Boston .....*S.* 139
Notes 140
Illustration:—Mimulus Clevelandi, n. sp., Fig. 20 135

Why We Need Skilled Foresters.

A FORTNIGHT before the adjournment of the last Congress, Mr. Fernow, Chief of the Division of Forestry in Washington, appeared before the House Committee on Agriculture and presented a statement in regard to some proposed legislation for the establishment of courses of forestry in agricultural colleges and the establishment of a national school of forestry. In regard to the special provisions of the two bills under discussion we shall take occasion to speak at another time, but just now it is our purpose to reproduce in a condensed form some of the arguments presented by Mr. Fernow to show why we ought to begin at once to provide for a supply of technically educated forest-managers. The shameful annual waste of our forest resources is due to a lack of knowledge of even the elementary principles of successful forest management, and the waste will continue until the necessity for greater knowledge is realized. This broader knowledge will surely arouse us to attempt the management of our public and private forest-lands on rational principles, and then the demand for skilled foresters will be urgent.

The forest area of the United States is the country's largest producer of value, except its agricultural lands, and these yield their return with much hard human labor, while our forests give their enormous quantity of material, exceeding in value a thousand million dollars every year, for the mere harvesting. Our forests, while yielding twice as much as all our mines of every kind, have been worked as if they were mines, and they have even been mined irrationally. Not only has the accumulation of centuries been taken away with no thought of future production, but the paying ore has been taken out and the tailings have been dumped on the remainder to make its development more difficult—that is, not only have the forests been slaughtered without any attempt to provide for growth in years to come, but the useful species have been culled out and the grounds have been left to inferior kinds to grow up and prevent the natural reproduction of the better kinds, and in this way the value of large areas of growing timber has been impaired.

According to Mr. Fernow's estimate, we have reduced our supplies to a point where we are cutting into our capital at the rate of fifty to seventy-five per cent. of our consumption every year—that is, it is probable that the annual growth of the timber in the United States does not amount to more than a quarter of the wood we cut and use in any year. Of course, a change from these irrational methods ought to have been made long ago. That such a change should be made before our supply approaches any nearer to absolute exhaustion may be understood when we remember that many of the trees we are now cutting are centuries old. The desirable pine lumber of Michigan and of Wisconsin began to grow in the time of the French and Indian war; the hard Pine of the south must be two hundred years old or more to satisfy a lumberman. The Spruces of Maine furnish comparatively little saw-timber before that age, and the big Tulips and Cypresses and many of the Oaks of the south, together with the magnificent giants of the Pacific, count their age by centuries. Our statistics are of the crudest, and it is useless to speculate how long our forest resources will last under the present methods of using them, but if these methods are not changed it is safe to say that a scarcity in desirable wood material will be pinching us within the next half century—that is, before a new crop can mature. Of course, we shall not stop or even materially reduce our consumption of wood until the necessity is at our doors, for it is the experience of the world that, in spite of substitutes and changes of condition, wood is so useful and indispensable to civilization that its total consumption does not abate. All this shows more than a lack of forethought. It shows among the people most interested an utter ignorance of the fact that the timber growing on an acre of land is a crop, and that it ought to be treated as a crop, just as Wheat or Corn is treated; that the growing of timber may be carried on as a business, and that this business requires skill and knowledge; that in our natural forests timber cutting and timber growing can be carried on at once, and that by a judicious use of the axe alone in old timber, a new crop of better quality and larger quantity to the acre can be reproduced.

There is no need to enlarge here upon the fact that in the south thousands of square miles have been made practically useless by erosion, which is directly traceable to the destruction of the forests there, nor upon such other established truths of general interest as that the destruction of forests intensifies floods, wastes the water which should be stored up for irrigating our plains, and injures crops and climate by allowing fuller sweep to drought-bringing winds. The need of preserving an assured supply of forest material is of itself enough to justify any effort at increasing the knowledge of practical forestry. That the agricultural colleges ought to be required to give some instruction on a subject so intimately related to the cultivation of the soil seems to need no argument. Many of the sciences on which agriculture is based must be studied by the skilled forester, and, therefore, these colleges are partially prepared to furnish the needed instruction. Several of them already do furnish instruction of a rudimentary and primitive character, but, until there are special chairs of forestry established, we can hardly hope that much technical education which will fit a man to manage forest property intelligently will be given. How men can be found to fill these chairs is a question to be discussed by itself, but, certainly, this educational problem is that part of the general forest problem which just now demands the closest study.

The Farm Home Reading Circle.

IN the latter part of the year 1892 the Faculty of the Michigan Agricultural College prepared a course of reading for farmers, gardeners, fruit-growers, stock-breeders, etc., to be used in what is designated the Farm Home Reading Circle. The object of this reading circle was to offer a systematic course of reading on agriculture and kindred topics, with books furnished at reduced prices through the Secretary, and provision was made by the State Board of Agriculture to have the printing, correspondence

and postage free, so that the books would be the only expense to members. Persons of any age were invited to join the circle. They were all entitled to the publications of the state experiment station, and they were encouraged to address questions on any doubtful points to the faculty of the college. When any reader completed a book he could obtain a blank from the secretary and make a written report on the leading topics of the work, and if this was satisfactory he was entitled to a written voucher which certified to this fact; when all the books in any one course, whether relating to the garden and orchard, to live stock, to soils and crops, or to any other special subject, was completed, the reader would be entitled to a certificate of the next grade, and on the completion of any three courses a diploma was to be issued.

Professor Mumford, who is the secretary of this circle, writes that it has met with unusual success. Three hundred readers are pursuing their work now, more than a thousand inquiries have been made, and twenty-five hundred persons have asked for circulars. In experience the course seems to be cumulative, and as one person reads a book he recommends it to a friend, who likewise reads it, and thus the circle widens. Expressions of appreciation have been received from influential farmers in many states, and from every evidence the course has begun a career of genuine usefulness. There can be little doubt that an organization of this kind will prove a genuine help to agriculture. The short courses in many of the colleges, schools of dairying, farmers' institutes and horticultural assemblies, like the one recently held in Chautauqua County, will accomplish a genuine service, even if they did no more than to bring farmers into contact with men of science, either personally or through books, and convince them that there is such a thing as scientific truth, upon which the best practice is always based. The young man, or woman, who reads a few books, will not be an accomplished practitioner in any branch of agriculture or horticulture, but if he is able to pass examinations in these works he will learn the value of study and mental application, he will learn how to think consecutively about his business, and he will know where to turn for information when he needs it.

The White Pine in the West.

THE White Pine has a peculiar record in the west. In Illinois and the greater part of Iowa it is one of the most satisfactory conifers that can be grown. I know of no tree anywhere that surpasses in symmetry and vigor a splendid White Pine-tree in the old James Smith homestead, south of Des Moines—a tree that was over fifty feet high when I last saw it, several years ago, and there seemed not a branch missing from its widely spaced, regular whorls. Along the Missouri River, in Kansas and Nebraska, White Pines can be found as vigorous and thrifty as any planted specimens anywhere. At the home of Hon. J. Sterling Morton, Nebraska City, are a number of White Pines of unusual beauty, the best of which is forty-nine and a half inches in circumference three feet from the ground, and forty-four feet eight inches high. Mr. Morton planted this tree thirty-two years ago, carrying it to its place in a water-bucket. It is thus seen that the White Pine grows as rapidly in the clayey bluffs of the Missouri River as in the sandy soils of Michigan. At Lincoln, Nebraska, only sixty miles back from the Missouri River, the White Pine is not a success. At Fairbury, almost due south of Lincoln, it does not compare with the other Pines, while at Franklin, more than half-way across the state, a few specimens have barely managed to exist during several years, in which the Scotch and Bull Pines have made vigorous growth. Nowhere back from the Missouri did I see vigorous trees, except at Salina, Kansas, where there are two good specimens twenty-four feet high, but these do not compare with the White Pines at Nebraska City, nor with the Scotch and Austrian Pines growing near them.

At Brookings, South Dakota, the same care that gave satisfactory results with Scotch Pine produced nothing but complete failure with White Pine. Five hundred transplanted trees, from ten to fifteen inches high, were received in fine condition, and were grown one year in nursery, being mulched during the hottest months. Very few died, but no appreciable growth was made. Good buds were formed, however, and the next spring they were set in forest-plats with White Birch and Box Elder. In three years not a Pine remained.

It would seem, then, that White Pine is not a promising species for planting much beyond the Missouri or in Dakota. In all the northern part of Missouri the White Pine can be successfully grown. At Columbia, half-way between St. Louis and Kansas City, and ten miles north of the Missouri River, there is a splendid avenue of White Pines on the old Rollins homestead, which average fifty feet high and show most satisfactory growth. Doubtless, the increasing aridity of the atmosphere west of the Missouri River is the reason of the failure of the species in that locality.

Washington, D. C. *Charles A. Keffer.*

Marketing Apples.

SOME essential points to be considered in the marketing of fruit were given by Mr. George A. Cochrane in a paper read a few weeks ago before a meeting of the Massachusetts Fruit Growers in Worcester. We quote in a condensed form a few paragraphs, which will be found interesting to buyers as well as growers:

For several reasons the barrel is too large a package for apples, which should be marketed in boxes no larger than those used for oranges and lemons. Last fall I advised the trial of such a package, and suggested that each apple be wrapped in paper as oranges and lemons are. Three thousand cases were sent to me for shipment to Europe. Out of fifty growers of apples only three understood what a close selection of fruit meant, and the apples sent by these three growers sold in London at $2.40 a case, when fruit in a barrel, which held three times as much as one of the cases, brought only $4.00. Some growers sent windfalls, in the hope that wrapping them in paper would insure their safe arrival in England. Some sent Snow apples and Russets mixed in the same case. Of course, when barrels are used, new ones, and not second-hand flour-barrels, should be used, for, no matter what care is taken to dust and wash them, sufficient flour will remain in the seams or staves of old barrels to rattle out in transportation and dust the fruit.

In packing a barrel select a fair sample of the contents for the bottom layer. Place the apples, stems down, in the form of a ring, beginning at the outside, and having secured this layer firmly, place the second layer in so as to fit closely in the interstices, then fill the barrel quickly and gently, and when one-third full rock it slightly to settle the apples. Repeat this rocking when the barrel is about three-fourths full, and when it is filled place a padded board on top and rock it while the board is held down firmly. Then place in enough more apples to form a cone at least two inches above the chime. Now force the head down with a barrel-screw presser, nail the chime hoops, both top and bottom, securely, and have the head-lining sufficiently large to lap the presser that forms the head.

Never pack red apples until they are of a good color. It is an expensive blunder to wait until the last moment and then strip the tree of all its fruit. It is also a mistake to pick the apples faster than they can be packed. It is a good plan to go over the trees a week or a fortnight before the general picking and remove the well-developed and well-colored fruit and market it at once. Aside from the advantage of early marketing, such pickings help the fruit which remains, increases its size and improves its color. Apples should be headed up at once, and if they are to be held they should be hurried into cold storage as near a temperature of thirty-two degrees as possible. They should never be allowed to lie on the ground, and under no circumstances should they be exposed to sun or rain after being picked or packed. Fall varieties decay quickly, because they are exposed to a higher temperature after leaving the tree than the winter varieties are, and more fruit is lost after being picked in the heat than from the frost. Growers who keep apples in bins to market during the winter should

select and sort at the time of picking. Only perfect and healthy fruit should go into such bins. Cellars should be ventilated so that advantage of any change in the temperature can be taken and the fruit kept as nearly as possible at the required coolness. When the average temperature has been above forty-five degrees from the time of sorting up to December 15th apples should be marketed as soon after the turn of the year as possible. When they are kept in the bin after this time they will not stand rough usage and will not answer to ship to Europe in barrels. One reason why fall fruit does not pay arises from the fact that large quantities of delicate fruit is placed in one compartment, which, because it is air-tight, becomes overheated. Such delicate fruit ought never to be placed in barrels, except for near-by markets, and then only under the most favorable conditions of weather. Were American apples marketed in as sound condition as oranges are, if they were graded as oranges are as to quality and size, if they were wrapped and packed as oranges are, they would be worth three times as much as they now command in Liverpool.

Foreign Correspondence.

London Letter.

Asarum maximum.—The genus Asarum has not hitherto claimed much attention from horticulturists, but A. maximum, now in flower at Kew, is certain to become generally liked on account of the large size and beauty of its flowers. It was first described by Mr. Hemsley, in *The Gardeners' Chronicle*, in 1890, from specimens collected in central China by Dr. Henry, who stated that it occurs in glens about Ichang Gorge on sides of cliffs, always some distance up, and that it is called "Ma-ti-hsiang" by the Chinese, who use the root medicinally. Mr. Hemsley described it as the largest of the genus known, the leaves being as much as eight inches across and eighteen inches high and the flowers two and a half inches in diameter, dull green, colored outside dark maroon-purple and velvety within, with a three-lobed conspicuous eye-like blotch of white surrounding the mouth of the tube. Except that the leaves are smaller, this description fits the plant now flowering at Kew. The leaves are not unlike those of Cyclamen in form and substance. In some species of Asarum the flowers have a strong aromatic odor, which is distasteful to some people, but A. maximum is odorless. The Kew plant was received from Hong Kong last year, and it has been grown in an intermediate temperature along with A. macranthum, A. geophilum, A. Thunbergi and A. caudigerum, all of which are natives of China. The genus Asarum is allied to Aristolochia. About a score of species are known, all of them being dwarf, with creeping rhizomes, cordate leaves, and short-stalked flowers, which are developed from the axils of the leaves, generally in tufts, the perianth being fleshy, tubular, with three broad spreading lobes. A figure of A. maximum has been prepared for the *Botanical Magazine*.

Shortia galacifolia.—This is not merely a botanical curiosity; when well grown it is a very pretty plant, quite equal in attractiveness to many of our most popular alpines. This week a plant of it was shown from the garden of Lady Bowman, Joldwynds, Surrey, which was awarded cultural commendation by the Royal Horticultural Society. It was in a pan nine inches in diameter, and was a large tuft of healthy green, brown-tinted leaves, from which sprung over fifty flower-scapes, each six inches long, many of them bearing a pair of open flowers. The bell-shaped corollas were an inch long and wide, white, with a pale flush of rose. Mr. Cornish, Lady Bowman's gardener, who is a clever cultivator of herbaceous and alpine plants, grows the Shortia in a mixture of sandstone and peat and keeps it in a cold frame, where it is sheltered from bright sunshine during the summer. We owe the Shortia to the Alleghanies, and possibly it is grown in American gardens better even than at Joldwynds; if not, then it is certainly worth trying.

Viburnum rugosum.—This is the Laurestinus of the Canary Islands, whence it was introduced into English gardens about a century ago and is still in cultivation here, though sparingly, as a greenhouse plant. It deserves to be better known, as it forms a sturdy shrub, is evergreen, its leathery, corrugated ovate leaves being five inches long and covered with a ferruginous down. The flower-heads, which are terminal, are like those of the common Laurestinus, but much larger, being four inches across and densely packed with pure white flowers, in which the pink stigma is an additional charm, and the odor powerful and agreeable. Some plants of it at Kew, raised from cuttings rooted two years ago, are now nice little shrubs two feet high, with fine heads of bloom, and they have been in flower several weeks. In places where this plant could be grown in the open air it would be an excellent spring-flowering shrub.

Eucharis Stevensi.—Examples of this plant were exhibited last Tuesday and obtained an award of merit. It is said to be a hybrid between Eucharis Sanderi and E. candida, and it closely resembles the former, which Mr. Baker believes to be a natural hybrid between E. candida and E. grandiflora (Amazonica). The flowers of E. Stevensi are of medium size, and they are borne on long scapes, the plants flowering freely. It was first flowered in 1885, when it was supposed to be E. Mastersii, a species introduced by Messrs. Sander & Co. from New Granada in 1885. The plants shown last Tuesday were from the garden of the Duke of Sutherland at Trentham. They were in five-inch pots, and each bore one or two strong scapes of bloom. There is one grand Eucharis and about half a dozen others, which would be considered first-rate were it not for this one, namely, E. grandiflora, the most useful of all tropical bulbous plants. The habitat of this Eucharis is still unknown.

Begonia, Paul Bruant.—I noted this useful hybrid as being in flower at Kew in February last year. This year it is later, a group of it being at its best now, the middle of March. The plants were struck in the summer of last year, and they are now a foot high, and bear large drooping clusters of elegant pale pink flowers, which remain fresh on the plant for several weeks, as they are nearly all female. There is a good picture of this Begonia in the *Gardeners' Magazine* for this week.

Begonia, Gloire de Sceaux, is much better this year than it has ever been, plants nearly a yard high being clothed with shining bronze-tinted foliage and bearing large erect trusses of rose-pink flowers. It was figured in Garden and Forest last year, page 185, the plant represented there, however, being small compared with those in flower now at Kew. I consider this one of the best of the winter-flowering Begonias and one of the most distinct. It is one of the now numerous progeny of B. Socotrana.

Three Good Greenhouse Primulas.—In the conservatory at Kew there are now groups of many kinds of spring flowers, and three of the most attractive are composed as follows: (1) Primula floribunda, rich yellow, and the double Chinese Primula; (2) P. verticillata, pale yellow, and Lily-of-the-valley; (3) P. obconica and red single Chinese Primula. A pleasing effect is obtained by arranging the plants in groups composed of one or two distinct things, much more so than when the plants are mixed indiscriminately. There is no need to recommend P. obconica as a garden-plant. It is a beautiful and most useful early spring-flowering plant for the conservatory. P. floribunda is not so well known. It was introduced to Kew from the Himalayas in 1883, and has been grown here ever since. Treated in the same way as P. obconica, it forms compact leafy plants in five-inch pots, the whorled leaves bright green, and the flowers crowded on erect scapes nine inches high, their color rich egg-yellow, and, although only half an inch across, they made a good show. P. verticillata is the third good greenhouse species, which is not generally grown. It forms a tuft of leaves nine inches across, something like P. vulgaris, but thinner, more distinctly toothed, and the surface covered with whitish flour, as in P. farinosa. The flower-stems are a foot high, and they bear several whorls

of leaves and two or three whorls of flowers, strong stems having twenty flowers in each whorl; these are semi-drooping, and have a tube over an inch long, a limb half an inch across, their color being primrose-yellow. Plants of these in five-inch pots are very decorative when in flower. At Kew these three Primulas are raised annually from seeds, and grown in frames along with and treated the same as Cyclamen Persicum. P. verticillata is a native of Arabia, although it is called the Abyssinian Primrose in gardens.

Violet, Princess Beatrice.—This is a new Violet, which was shown last Tuesday from the Queen's garden at Osborne, Isle of Wight, and received an award of merit. It is the largest-flowered Violet grown here, the flowers being an inch and a half across, the stalks nine inches long, and the leaves three inches in diameter. Its color is rich blue-purple, brighter than the color of Victoria, which was also shown, and its fragrance quite equal to that of any of the big-flowered Violets. Mr. Nobbs, the gardener at Osborne, says that he found this new Violet growing in an uncared-for part of the garden, and that Her Majesty, who is fond of Violets, prefers it to all others, and desired that it should bear the name of Princess Beatrice. I have not seen the new American Violet called California, but those who have say it is very similar to this royal waif. There is an enormous trade done in Violets in England in the first four months of the year, as they are universally popular with flower wearers. The large-flowered, bright-colored varieties find most favor with ladies.

Strawberry, Stevens' Wonder.—This is a new variety which obtained a first-class certificate last Tuesday, when Mr. Stevens, a Sussex nurseryman, exhibited plants of it in pots and bearing exceptionally large crops of large, handsome, well-colored, highly fragrant fruit, which in form may be described as intermediate between Noble and Sir Charles Napier. The leaves are small, dark green, with short stalks, and the fruit-stalks short and firm. Mr. Stevens had plants of it in full bearing on February 21st, when he sold the fruit to Mr. George Munro, the Covent Garden salesman, at six dollars per pound. I saw a letter from Mr. Munro, in which he stated that this Strawberry was the best for early forcing that he had ever seen, as the fruit was large and of good flavor. The pale color would, perhaps, be against it later in the season. Some plants grown in six-inch pots produced from twenty to thirty fruits, the largest being one and a half ounces in weight. Growers of early strawberries reckon that there is sure to be a large demand for Stevens' Wonder.

London. *W. Watson.*

New or Little-known Plants.

Mimulus Clevelandi.*

THIS species (see figure, page 135), one of the handsomest of the genus, was found on the south side of Cuyamaca Peak, in southern California, not far from the signal station on its summit. It grows in patches, spreading by underground roots. Among loose rocks the stems attain a height of two feet, but on exposed slopes their length is considerably less. Although growing at a much greater elevation (over 6,000 feet) than Mimulus glutinosus, its stems are woody, though short. It connects that species more closely with the sections Œnoe and Eunanus, which have in most cases the same dehiscence. It is now in cultivation in San Diego, and it will be of interest to observe whether its stems become longer or larger in this milder climate.

The species is named in honor of Mr. Daniel Cleveland, whose name is so well known in connection with the flora of San Diego County.

San Diego, Cal. *T. S. Brandegee.*

[Judging from herbarium specimens, this Mimulus ought to be a good ornamental plant in California or southern Europe. Of course, it would not be hardy here, and it is hardly probable that it would make a good greenhouse plant, but, in dry climates, where it could be watered, it might become a large shrub and flower throughout the year.—Ed.]

* Mimulus Clevelandi, n. sp. Perennial, suffrutescent at base, 3–6 dm. high, glandular-pubescent throughout; stems many from the base, sparingly branched above; leaves lanceolate, serrate, 3–7 cm. long, narrowing to the clasping base, in age revolute on the margins; flowers shortly pedicellate; calyx 2 cm. long, contracted above the ovary, the upper and longer portion curved and spreading, the lanceolate, somewhat unequal teeth ¼ the length of the tube; corolla golden yellow, nearly twice the length of the calyx, with gradually dilated throat and widely spreading nearly equal lips; style stout, minutely and densely glandular; stigma tubular-peltate; mature capsule 10–12 mm. long, nearly quadrangular, tapering slightly toward the apex, opening to the base by the upper suture, the lower separating for only a short distance from the tip, and each valve aplitting at the tip for nearly the same distance as the lower suture; placentæ separate, as in M. glutinosus; seeds foveolate, apiculate at both ends.

Plant Notes.

Leucojum vernum.—Although not one of the very earliest spring-blooming bulbs, this Spring Snowflake, as it is familiarly known, in favorable situations follows closely the Snowdrops and Crocuses. It is like a very large Snowdrop; the white flower, with yellowish green tips to each petal, is graceful and charming. It should be planted in clumps, in well-drained soil, in a sheltered place, and not disturbed after it has once become established. Although long in cultivation, the Spring Snowflake is by no means common in American gardens, probably because it is not so easily handled as most bulbs, and does not thrive except under the conditions noted above. The bulbs are cheap and easily obtained.

Strobilanthes Dyerianus.—This new bedding-plant belongs to the Acanthus family, and is one among its many plants remarkable for bright-colored foliage. It is nearly related to the better-known Goldfussias and Ruellias, but is of no value as a flowering plant. It is soft-wooded, having the thick nodes that characterize the order; stout, erect stems and opposite leaves. When kept in vigorous growth the foliage is remarkably beautiful, of a rich iridescent purple, with green veins, and slightly suffused with steel-blue. The plant, however, if left alone soon runs into flower and then becomes ragged and shaggy. The flowers are individually quite pretty, about an inch long, labiate, almost regular, and pale blue in color. The inflorescence is a loose-bracted spike, rather large, but not pleasing in appearance. The chief value of this new species is, therefore, as a foliage-plant, and then only for outdoor use. Whether or not it will prove superior to the darker varieties of Coleus as an effective bedding-plant remains to be seen. It will probably form beds of a more striking and characteristic appearance, and doubtlessly deserves a good trial. The culture is very easy; cuttings may be rooted in a brisk bottom-heat in two or three days and when potted in rich, fibrous soil, and kept warm and moist, they will grow rapidly. Plants can be propagated by cuttings, like Coleus, or by means of single eyes, with a leaf attached. As the leaves are opposite, the stem may be split, and two cuttings made of each node. This method, by which a larger number of plants can be made from limited stock, is very good, but a single eye will not produce a plant as rapidly as a growing top.

Begonia Feastii.—A Begonia is occasionally seen in the gardens of the eastern states labeled with this name, although it is sometimes grown under other names, or with no name whatever. In a note about this plant, which he considers the most useful of the winter-flowering kinds, on account of the ease with which it is grown and its neat compact habit, Mr. Michael Barker, of Cornell University, says: "I am now well satisfied that it is a hybrid of American origin. I do not remember to have ever seen it in European gardens, and it is not catalogued by any of the European dealers, at least as B. Feastii, and I have never been able to find a figure of it. The only references to it which I know are two slight ones in *The Gardeners' Monthly* for 1885. It is there said to be a hybrid, raised by the late John Feast, of Baltimore, Maryland, from the old species, B. hydrocotylæfolia, as one of its parents, but the other

does not appear to have been known. The stems are thick and spreading and well furnished with prominently veined leaves, deep green on the upper surface, and reddish beneath. The staminate flowers are inconspicuous, dropping from the plant at an early stage of their existence; but the pistillate blossoms are better developed, showing perfect stigmas and two small orbicular sepals. The petals are suppressed; but, from a decorative standpoint, the broad-winged ovaries make up for all other deficiencies. The ovaries proper are of greenish white color, the wings and sepals bright pink." Mr. Barker sends a photograph of this Begonia in flower, which shows a plant of neat and distinct habit and graceful inflorescence. We should be glad to receive any additional information as to its history.

Fig. 20.—Mimulus Clevelandi, n. sp.—See page 134.

Cultural Department.

Some Flowering Plants for Easter.

MOST private greenhouses are called upon for flowering plants for church, house or conservatory decorations at Easter-time. This year the date is later than for several seasons past, and a good deal of forethought and judgment is required to have some varieties in flower at the right time. Easter Lilies are the most important crop, and one of the most difficult to have in condition at a required time. As a rule, if the buds just begin to show when Lent begins the flowers will be on time without forcing the plants unduly, By hard forcing we have had plants flower in March, even when the buds were only seen four weeks before Easter. If brought on in an ordinary greenhouse temperature, six weeks is not too long a time to allow, even if the plants are not needed until the middle of April. Lilium longiflorum requires fully a week longer to develop than L. Harrisi; L. candidum taking about the same time as the last named. We use eight-inch potsf or Lilies. The largest bulbs are grown singly, while the small ones are placed three in a pot. The average product of the larger bulbs is from eleven to fifteen flowers, while the smaller ones produce from six to nine flowers.

The herbaceous Spiræas are indispensable Easter plants. They should be allowed from eight to ten weeks for flowering after they are potted. Spiræa Japonica is still more largely grown than any other variety, but its variety, Grandiflora, now that it is becoming cheaper, will largely supersede the older plant. When well grown, it makes a beautiful pot-plant. S. astilboides forces very readily, but it has not the compact habit of the other two varieties. It grows much taller, and is worth growing for variety. S. palmata we do not find satisfactory. Spiræas should be removed from the house or stood on the floor and covered with paper while the place is fumigated, as the foliage is very easily scorched, and large numbers of plants are ruined every year through neglect of this precaution.

Hydrangeas, especially H. Otaksa, make admirable Easter plants. We began to force our plants at Christmas, and the flower-heads will be well expanded early in April. Cuttings inserted early in February and potted off when rooted, if planted out-of-doors toward the end of May, and watered during droughty weather, will be fit for eight-inch pots in September. Such plants give from eight to twelve good panicles each, and cuttings rooted later in the season will flower well. Plants grown in pots all the season and plunged in a bed of ashes have not proved as successful with us as those planted out.

Azaleas are among the most popular of Easter plants. Owing to the lateness of Easter this year, it is impossible to hold back some varieties, notably the beautiful double kind, Vervæniana, but A. Borsig, double white; Impératrice des Indes, double rose, edged with white; Sigismund Rucker, rose-pink, bordered white, dark blotch; the magnificent Madame Van der Cruyssen, rose, with spot on upper petals, and one or two other kinds will be in season if held in a house with a northern exposure or in a cold frame until a few weeks before they are needed. Plants of A. mollis are among the best forcing plants, and a few of these are always a welcome addition at Easter.

Cytisus, in six to eight inch pots, which have been clipped into shape during the growing season, and held back in a cold house, make excellent Easter plants. Cytisus racemosus is much superior fo the older C. Canariensis. Some kinds of more recent introduction have much larger racemes, notably C. elegans. The flowers, however, are produced less freely than on the older sorts.

White Marguerites, or Paris Daisies, are very useful for church or conservatory decorations, and cuttings inserted in October, if grown along in an ordinary greenhouse, will make fine bushy plants in eight-inch pots by Easter-time. The variety Maximum is the most serviceable; the yellow-flowering varieties, Comte de Chambord and Etoile d'Or, flower unsatisfactorily, and are rather straggling in habit.

Deutzia gracilis is one of the best forcing shrubs and can be quickly pushed along at this season. Cuttings of soft wood strike very freely, and make nice plants if planted out for two years. The plants, when of sufficient size, should be grown along in pots all the time and plunged during summer in a bed of ashes. Plants dug out of the ground, potted and forced, yield plenty of bloom, but the quality of the flowers is inferior to that of pot-grown plants.

Callas are always in large demand for Easter, and the old Richardia Æthiopica is still altogether the best. The variety, Little Gem, so loudly praised, can hardly be called a success as a winter bloomer. Until the middle of February our plants hardly showed a flower, and while it is now blooming fairly well it does not equal the old variety in its free-flowering qualities. Many growers have become discouraged with Little Gem and have discarded it entirely, but a few plants well flowered are quite effective in decorations.

Some of the Begonias, especially the Manicata section, will be in good bloom for Easter this year, and are certainly beautiful when well flowered. B. semperflorens gigantea, with its brilliant carmine-red flowers, borne in large panicles, is one of the finest of its class. From cuttings inserted now large bushy plants can be had for next winter. Planted out in a partially shaded border, all the fibrous-rooted Begonias do well in the summer, and if carefully lifted and potted in September sustain very little check.

Easter generally comes too early for the flowering of fancy Pelargoniums, or Lady Washington Geraniums, as they are commonly called. This year a number of our plants promise to be in good bloom. No soft-wooded plant equals in beauty a well-flowered Pelargonium, and it is satisfactory to note that they are gradually coming into popular favor again. Cuttings rooted in September and potted and grown along in an ordinary greenhouse, make good plants in six-inch pots at this season; older plants cut back are, however, preferable. Good varieties are Volonte Nationale alba, Mrs. R. Sandiford and Princess Teck for white; Madame Thibaut, a beautiful rosy pink, and Kingston Beauty, white, with maroon blotch.

Cannas, potted in the fall when the roots are lifted from the beds, are capital winter-flowering plants and make a brilliant show at Easter. We grow our plants in eight or ten inch pots in a moderately warm greenhouse. Madame Crozy is still the best of this family as a pot-plant; Alphonse Bouvier and Charles Henderson are good of their color, the first-named being the most satisfactory winter bloomer here. Florence Vaughan, although not a free winter bloomer, is now in full flower.

Cinerarias will be mostly spent before Easter-time, but herbaceous Calceolarias more than make good this deficiency, and well-grown plants are highly decorative. White Stocks are useful plants, and for decorations we use the kind known as Boston Florist. Antirrhinums make good pot-plants and can always be had in flower for Easter. Bulbous plants, such as Hyacinths, Tulips and Narcissus are always popular, and very little forcing will be needed this year to have them in flower. Two of the most useful Orchids at Easter-time, Cattleya Trianæ and Cœlogyne cristata, are now on the wane. Plenty of material is available among Odontoglossums, Cattleyas and Lælias, to say nothing of other genera of Orchids, to make a good display, where these plants are grown.

Taunton, Mass. *W. N. Craig.*

Japanese Anemones.

THERE is no more suitable plant for piazza, porch or hall decoration than the Japanese Anemone. As a pot-plant it is unexcelled, and fully repays any extra attention given to it. Though generally grown as a hardy perennial, it is not entirely successful as such. The flowering crowns are frequently destroyed during severe winters; but, as every piece of root develops adventitious buds in the same way as our native Anemone Pennsylvanica, the plants are seldom killed outright, and will shoot up again later in the season, but generally too late to make strong blooming crowns before frost. By storing our plants in a cool cellar we avoid this drawback; and as they do not lift well when planted out, we find it better to repot them every year. We shall overhaul our plants in a few days, potting them in good heavy loam and well-decayed manure in the proportion of one-third of the latter. We use twelve-inch pots, as our clumps are large, containing eight to ten crowns. Small plants, such as are obtained from the dealers, might be put three together in eight-inch pots, making effective plants by the autumn, and these would be large enough for twelve-inch size next season. It will be found in repotting old plants that they have in the course of the previous season made a number of fleshy underground stems. These had better be trimmed off, for if left they will grow and fill up the pot with a lot of useless growth, impoverishing the soil. These stem-like roots develop plantlets from every bit, and so, if any stock be required, it would be well to make a thin layer of them in boxes, with a covering of sandy loam. This is the way the dealers obtain their stock. If, after being potted, the plants are put into cold frames and encouraged by husbanding a little sun-heat the latter part of the day, and slight protection at night, they will make some growth, which will place them two or three weeks in advance of their natural season of blooming. We get ours into bloom early in August, and they continue to flower until November. Having started

them into good healthy growth, we gradually harden them for exposure about the end of May. Being considered hardy plants, it is natural to suppose that they will bear exposure well. They do not, however, when forced in any way. The young leaves are likely to be disfigured by a chill, and as these leaves remain on the plant all the season, it is important to preserve them. I remember, too, when the thermometer fell to thirty degrees, Fahrenheit, on the last night of August, 1888, all the flowers and buds were destroyed. This has not happened since. When well established, abundance of water should be given. In general, the treatment given Chrysanthemums will answer for them.

These Anemones make good specimens. The handsome vine-shaped foliage and the white or pink saucer-shaped flowers harmonize beautifully. The flowers are borne on stout umbellate cymes, and are nearly two inches in diameter on well-grown plants. By the use of light stakes, such as Privet-canes make, a good plant in a twelve-inch pot may be spread to three or four feet, and yet be well furnished. They stand the wind and weather well. The variety known as Honorine Joubert is the best white variety, and Anemone Japonica hybrida the best pink.

Wellesley, Mass. *T. D. H.*

Snowdrops, New and Old.

As a compensation for the backward season which has retarded some flowers from thirty to sixty days, we have a rather better show of bloom at this time than in seasons when plants flower normally. The earliest Snowdrops are just disappearing as the first buds of Narcissi are showing. Usually we are favored with periods of open weather during the winter, when the early flowers expand. There were no mild intervals during the winter just ending, so that Snowdrops did not open before the end of February, and until lately other winter-flowering plants have had little chance to overcome the obstacle of nightly frosts. The background of snow which is the foil against which these early flowers are usually seen is missed this year.

Snowdrops are now in midseason. The flowers of Galanthus Elwesii are about gone, but various other species and varieties are in full flower or not yet open. It is pleasant to note the fine acquisitions to Snowdrops from year to year, for while the older varieties are lovely flowers and not to be discarded, we have now many new kinds, with much larger flowers and in some cases very distinct foliage.

Whenever many gardeners are interested in a certain plant there is a tendency to name varieties on very slight variations, but there are really striking differences in the Snowdrops, which would be more distinctly seen if the foliage was more forward when the flowers are at their best. Galanthus Cassaba, which was received from Mr. Whittall last year, has much improved this season, and in respect to size and vigor is among the best Snowdrops in the collection, while inferior to none in beauty. The flowers have sepals over an inch long and rather broad. The petals, marked like those of G. Elwesii with green to half their length, have green lines at the apex. The ovaries are a yellowish green. The stems are very thick and upright. The bulbs, which have a long neck, are as big as those of an ordinary Narcissus. The leaves are pointed, broad, somewhat Scilla-like and glaucous. I believe this is a variety of G. Elwesii, and that it was collected near Aidin. A variety sent me by Dammann as G. robustus is identical with G. Cassaba.

Galanthus Imperati Atkinsi is equally as large and vigorous as G. Cassaba, and as the scapes are less stiff it is rather more pleasing in the border. It has the objectionable habit of trying to double its petals, but this objection would not deter one from growing all he could secure of it. Its petals are white, with the exception of green markings on the sinus. This is the most effective Snowdrop in the garden.

Plants of Galanthus Elwesii Aidin did not ripen as well as in their native habitat, as they are not as vigorous or prolific as the collected bulbs were last season. Still they prove to be a neat, distinctly marked variety. Some of them still retain their tendency to produce twin-flowered scapes. Last year I discovered one with a most curious twin-flower, which at first glance seemed one of ordinary form. The ovaries of these flowers were flattened at one side where they met, and from each grew only two sepals instead of three, as usual, so that the outward appearance was quite normal. Among these was also a pallid form, of color similar to G. lutescens, which is a variety of G. nivalis. This has retained its form this year, and as its petals are white with only the faintest suspicion of yellow dots, it is worth a name if it will increase. G. Ikariæ Mr. Whittall had collected in the Island of Nicaria. It has wide strap-shaped leaves, light green in color. This proves to be late, and it is not yet in good form. It flowered well last year with medium-sized flowers, the petals of which, if I remember rightly, had the markings on the sinus connected with the green of the base. It is a very distinct variety.

Galanthus Elwesii unguicularis is a form which has been separated and named, I suppose, from the claw on the spathe. At present it might be matched by some of the types of the collected G. Elwesii, among which there is considerable variation. By the way, whoever buys G. Elwesii should give the preference to collected bulbs. Cultivated bulbs may sometimes be larger, but the grower will probably retain the finer forms for part of his toll.

Galanthus Ochrospeilus is another of Mr. Whittall's latest finds, and this season flowers for the first time in cultivation. It appears to be a small-flowering kind, oddly marked with a short, green, narrow line on each sinus, and similarly marked at the base. The tube is somewhat constricted at the opening.

A variety from Samos, of last season, does not seem distinct, and differs little from plants from Bithynia, both being forms of Galanthus Elwesii. One of the Snowdrops which I most value is Mr. Allen's hybrid, Charmer, a flower of fine form, much substance and perfect vigor. Among flowers of great purity the variety of Nivalis G. Melvellii major is in the front rank; it is a dwarf kind. Snowdrops unopened, or in the bud stage, are very fascinating, and I enjoy best the long-pointed forms. Of these, G. Caucasicus is one of the most pleasing, a happy medium between the narrow Nivalis and the broad Elwesii. There are numerous other Snowdrops in the garden which I have not had time to study, but it may be well to call attention to one which is specially curious, G. Scharlockii, which might be called the horned Snowdrop, as its divided spathes resemble horns in outline. The spathes of Snowdrops are interesting. If a rising Snowdrop is observed it will be noticed that the flower is upright and is enveloped in the spathe, which is mostly a thin transparent membrane. At the proper time this splits at one side usually, and the two edges roll up toward each other till it appears, on a casual glance, to be merely a flat leaf-like appendage, whose top is bent over the pedicel of the flower. In G. Scharlockii and a few other kinds the spathe splits in two parts. This Snowdrop has green markings on the outer petals, which are rather blunt. It is not particularly handsome, though well worth growing. It is vigorous and increases rapidly. Most Snowdrops do well in my garden, though they receive no special care or treatment. There are some, however, which will not stay with me. The autumnal flowering ones have disappeared. They seem of too delicate a constitution for the open border, where my scheme of gardening does not embrace any attempt at coddling. G. plicatus has not survived with me, though I believe it is not usually a miffy kind. G. Forsteri apparently needs a moister richer soil than most kinds, for it still refuses to give me flowers of size and substance.

Elizabeth, N. J. *J. N. Gerard.*

The Cherry Fruit Mold.

It is a good thing to grow cherries in abundance, provided the grower harvests his crop, but to have a score or more of large Cherry-trees loaded with fruit left unpicked is a menace to the whole neighborhood. It should be remembered that such fruit left upon the trees, especially if the weather is moist, will develop, literally by the bushel, a fruit mold which is well known from its gray color and soft, powdery feel. This fungus, Monilia fructigenum, is not confined to the Cherry-tree, and on this account one can consciously raise complaint against a neighbor who lets the fruit on his Cherry-trees go to decay. The Plum and the Peach are similarly attacked, and the Plum especially is often seriously injured, the whole crop going off just before the time for picking. Suppose the Cherry-trees full of fruit, ripe and decaying. This crop comes before the plums, and the whole atmosphere is charged with the spores of this gray mold of the Cherry. These spores germinate very quickly, the winds carry them in all directions, and the Plum-trees anywhere in the vicinity of such Cherry-trees will receive a full supply of them, so that the fruit cannot escape decay. Spraying will do much to prevent the loss of the plums; but a man will need to be almost constantly in his Plum orchard administering the remedy to counteract the effects of the few large Cherry-trees that were distributing spores throughout the neighborhood.

The Peach in like manner is affected, but coming still later is not quite so apt to be influenced by the crop of Monilia on the Cherry-trees as the Plum; but the Peach is attacked somewhat earlier in its stage of development. The surface of the fruit being covered with a down is better able to hold the spores than the smooth surface of the plum, and in that way

the growth may take place while the peach is yet green and hard.

There are many Cherry-trees throughout our middle states that have passed their stage of usefulness and are now doing considerable damage to orchards that otherwise might be profitable. One needs only to drive through the country in almost any direction to find giant Cherry-trees carrying inferior fruit, out of reach of pickers, and comparatively worthless if gathered, which serves as propagation places for one of the worst enemies of the stone fruits. Such trees in many cases could be spared; their owners ought to cut them down. Trees after they have passed their stage of usefulness are not always a source of infection to other trees; but it is manifestly true in the case of the Cherry, which becomes a place for the rapid and abundant propagation of a microscopic enemy to other stone fruits.

Rutgers College. *Byron D. Halsted.*

Yellow-fruited Tomatoes.

THERE are four distinct classes of Tomatoes as regards the color of the fruit; and in this case there is a more than usually intimate association of other qualities with that of color. Of the red tomatoes there are the deep, dark red varieties, like Perfection, Favorite, Ignotum, Optimus and Ponderosa; and a very distinct lighter pinkish colored group of such as Beauty and Dwarf Champion. These are very distinct also as regards texture, flavor and appearance of the flesh.

The yellow varieties are similarly divided into two classes, of which the old-fashioned golden yellow apple-shaped fruit represents the first type. There is almost a metallic lustre to the skins of good specimens of this type. Concomitant characters of this group are thin septæ, tough flesh, large and abundant seeds—a general assemblage of undesirable qualities. The Yellow Trophy seems to fall into this classification here, though, wherever I have seen it it has been very unstable, showing usually several fruits of the next class; and I have often wondered if the seedsmen who sent out the seeds had not selected them from the better strain, and if the trouble was not simply in a reversion of the majority to a type evidently prevenient.

The second division of yellow varieties contains strains of later origin, considered either historically or biologically. Golden Queen and Golden Sunrise are the proper representatives of this group, though other names, not well authorized or permanently adopted, have been found to cover similar varieties. The Shah, said to be a sport from Mikado, is also of the same color. These tomatoes are not properly yellow, but are cream-colored, much duller than the other yellows, and not at all metallic in lustre. At the same time they have thick meat, fleshy septæ, small seed cavities, are grainy and tender in texture and pleasantly mild in flavor.

This last group, it seems to me, has not received nearly enough attention, either from amateur or professional horticulturists. The varieties already named, though, perhaps, not so stable as might be desired, have superior table qualities when grown in their perfection; and if this were generally understood, so that the demand for seed might gain some proportions, they would present a fine field for work in seed selection. They are milder in flavor than the best red varieties; and for eating sliced are much finer, according to my taste. Their appearance on the table is also quite as attractive as that of any fruit.

Monsieur G. Alluard, in the last number of *Revue Horticole*, 1895, p. 110, expresses a very high opinion of the yellow varieties. He says: "The best yellow varieties of the tomato make a very appetizing, clear yellow purée, which gives completely the illusion of a fine stew of fruit. The flavor is equal to that of the best red varieties. They are very much better than the red tomatoes for mixing in sauces to which one wishes to give more or less of a tomato flavor. Their color permits this to be easily done, whereas the ordinary tomatoes impart to the sauces a very undesirable red tint. They serve equally well with red tomatoes for making very pretty salads, either in a mixture of alternate slices of the two colors, or put upon separate plates, and garnished with a fresh border of chervil. And lastly, one may use these fine fruits, either separately or in clusters, for garnishing desserts."

It also seems to me that the cream-colored sorts would be superior for canning, though I have not seen them tried. At the canning factories color is a very important quality, the pink varieties, so I am told, being entirely discarded because they do not present an attractive appearance on coming out of the can. Now, I should expect nicely canned specimens of Sunrise to be as handsome as canned peaches when opened. They are somewhat suggestive of peaches when served sliced and fresh, and are almost as good as that standard of superlative excellence when eaten with sugar and cream.

Oklahoma Agricultural College. *F. A. Waugh.*

Onosma stellulatum.—It was a great pleasure the other day to see in the nurseries of J. W. Manning, at Reading, Massachusetts, a good lot of this beautiful and rare hardy plant, for this is one of the plants that are never forgotten after they are once seen. The Onosmas belong to the Borage family, and all have the characteristic rough foliage; very few are desirable garden-plants, but O. stellulatum is an exception, and its drooping heads of bright yellow sweet-scented flowers justify the garden name of Golden Drops, which has been given to it. This same plant is often known as O. Tauricum, and the authorities seem now to regard the latter as a fixed yellow-flowered form of O. stellulatum, the flowers of which vary from white to various shades of yellow. There is a difficulty often experienced in keeping the plant for any length of time under cultivation, and it is caused in most instances by planting it on a level ground and in soil that is retentive of moisture. A sharp sandy soil, not over rich, and sloping toward the sun, is admirably adapted to its culture. After flowering, the first opportunity should be taken to put in a few cuttings, which should be taken off with a hard base and placed in clear sand, where they will root without trouble, and duplicates can then be had to make good a possible loss. Our losses have invariably occurred during a protracted wet period in dog days. Heavy showers will then bespatter the foliage with soil, and the plants fall an easy prey to damp before the danger is noted; hence the desirability of planting in free soil and the usefulness of placing small stones under the plants to keep the earth cool and protect the foliage. O. albo-roseum is an annual species, with which we have never been able to succeed; and we have still another species from seed sent from Asia Minor, but this is not old enough to bloom yet, although it promises to do so this season. Of some seventy species of this genus, the above are about all that are in cultivation now, the rest not being introduced yet.

South Lancaster, Mass. *E. O. Orpet.*

Lettuce for Forcing.—Every one who tries to keep up a supply of lettuce during the winter months knows the value of a reliable variety. With so many new and old kinds now offered, it is only by experience we can find out which one is most satisfactory when all things are considered. Of several kinds which we tried this winter, Rawson's new Hot House approaches most nearly an ideal Lettuce for forcing. It was grown alongside of some old favorites, such as Boston Market, Tennis Ball and others, but it easily leads all of them. It grows to a large size, hearts quickly and well, has a delicate flavor, and resists damp better than any variety we have ever grown.

Tarrytown, N. Y. *William Scott.*

Correspondence.

Oranges in Southern Mississippi.

To the Editor of Garden and Forest:

Sir,—In what may be called ordinary or average seasons oranges ripen well in southern Mississippi, but killing frosts come every few years, so that while oranges are grown here as a luxury they are never considered as a reliable, staple crop. Nevertheless, immunity from cold waves for a few seasons gives every one a sense of security, all precautions against the frost are neglected and then the disaster falls. About this enchanting coast town, in the extreme southern part of the state, up to holiday week, the Orange-trees were loaded with fruit; our Christmas oranges came fresh from a grove in full bearing, and no fruit was ever more beautiful. Then came the sudden drop in temperature, and every orange on the trees was frozen to a solid cake of ice. All the leaves and tender limbs in the groves died, many fine trees were killed outright, and since New Year's there have been three more periods of distinctly freezing weather, to complete the destruction.

The special purpose of my letter, however, is to say that one grove here escaped destruction and is now showing signs of returning growth in every tree but one. The owner is an intelligent Italian, and it may be worth while to give his method of treatment. He says that his father cultivates oranges near Naples, and his practice is the one generally employed there as a safeguard against periods of excessive cold. In autumn he scrapes away the rich top soil from the roots of his trees and allows them to dry, and since he irrigates his grove he at this time withholds all water. The trees then are at rest, except for the ripening fruit, which seems to be as good as that in

irrigated groves. If freezing temperature comes, these exposed roots freeze with the tree, and yet he claims that their dormant condition and lack of sappiness protects them from harm. As to the correctness of his theory I am not able to pass judgment. I only know that his trees stand with bared roots all winter until there are signs of spring and returning vitality and flowing sap, when he applies his fertilizers and throws back the soil and begins to irrigate. I should add that he does not give his fertilizers all at once, but in moderate amounts every few weeks as the tree needs it. As he waters the trees and fertilizes them as they need feeding, so he keeps down all grass and weeds during the spring and early summer, so that they cannot rob the grove and prevent the trees from securing the full benefit of the food. The one tree lost stood in the rear of his house where the waste water from the kitchen reached its roots. This tree was in growing condition in the autumn and the frost killed it. My attention was called to the fact that after the first frost every Orange-tree in his grove cast its leaves, which their proprietor noted as a sign of life, for trees struck by lightning or otherwise deadened hold their dead foliage apparently without the power to cast it off.

Pass Christian, Miss. *G. T. Drennan.*

A Large Grapevine.

To the Editor of Garden and Forest:

Sir,—Some time ago Garden and Forest suggested that it would be of interest if observers in different sections of the country should make a note of the size of the Grapevines in their several neighborhoods. The largest one I have ever seen is growing at Rose Dhu plantation, on the May River, South Carolina. This vine, supposed to be Vitis æstivalis, grows on the edge of a bluff three or four feet high, at the base of a large Live Oak, and measures, at three feet from the ground, forty-eight inches in girth, and at one foot from the ground fifty-four inches in girth; this lowest portion of the stem, however, is protuberant and nodose. One of the large cable-like limbs extends out near the adjacent marsh, then dips down into the mud, in which it is somewhat buried, doubtless deriving some sustenance and growth from the salt water which laves it at every tide. Other portions of the vine clamber out and clasp the large limbs of the Oak in innumerable folds of cordage, covering the Oak from top to bottom, then extending out to and covering two other Live Oaks, one to the right and the other to the left of the central tree, the distance between which measures at least twenty paces—thus making the finest picture of a true "Forest Laocoon" which I ever saw on the Carolina coast.

Bluffton, S. C. *J. H. Mellichamp.*

Exhibitions.

Spring Flower Show in Boston.

THE exhibition of the Massachusetts Horticultural Society, held here last week was as good, at least, as any of its predecessors, and many thought it better than usual, owing to the fact that the mild weather which prevailed early in the week enabled the growers to transport their plants in fine condition. The most striking feature of the show was the Orchid exhibition, and probably its excellence was partially due to the premiums offered for the tasteful arrangement of these flowers with other plants. The difficulties of arranging a table of Orchids for effect are well known, and yet Mr. William Robinson, gardener to Mrs. F. L. Ames, did his work with excellent taste and skill. He had abundance of material to begin with, and the foliage of various Adiantums, and small Palms like Cocos Wedelliana, were plentifully used to bring out the colors of the flowers and give a finish to the groups. In the collection there were very many rare Orchids, and some unique ones, particularly the exquisite forms of Odontoglossum crispum, with well-marked flowers on long sprays. The wonderful pea-green and maroon-striped Cypripedium Rothschildianum, with three spikes, each bearing three flowers, was probably the most noteworthy single plant on exhibition, and it would be hard to find a better example of high cultivation. When this Cypripedium is seen in such admirable form as this there is little wonder that it is so much admired. A plant of Miltonia Bleui splendens with its two spikes, each bearing flowers four inches across, was another striking specimen, and it recalled the beautiful pictures of the plant published in Garden and Forest, vol. v. The second prize group of Orchids was from the gardens of Mr. John L. Gardiner, and in the collection of Mrs. Durant, of Wellesley, was a remarkable specimen of Dendrobium nobile, in the cultivation of which the gardener of the establishment, Mr. Butler, is a recognized master. This plant was grown in a fourteen-inch pan; it was nearly three feet in diameter and carried between nine hundred and a thousand flowers. It was an excellent object-lesson in the way of pruning Dendrobiums, since all the growths that had flowered the previous year had been cut out, leaving only those of the present year with few of last year's pseudo-bulbs, nearly all of which were bearing. Mr. Butler showed a plant similar to this two or three weeks ago, and these are two, we believe, of several that he has grown on from small plants.

Of course, there was a large display of forced bulbous plants, the best being those shown by Mr. Kenneth Finlayson, gardener of Dr. Weld, and the Bussey Institute. It is a pity that there was no full collection of Narcissi. Our gardens show no more attractive flowers than these, and there are numerous species and varieties, with new forms of distinct merit, appearing every year. The best Tulips were Prince of Orange, Thomas Moore, Duchess of Parma, Kaiser Kroon, and some of the best Hyacinths were Queen of the Blues, Lord Derby, King of the Blues, Gigantea, Macaulay and Leviathan. Cyclamens are always well shown at this exhibition, and the contest for first honors between well-known exhibitors has always been close. This year a new competitor appeared in Mr. John Barr, gardener to Mrs. B. P. Cheney, of Dover. He received the prize for the best ten plants, which, although they were not larger than those of his closest competitor, seemed to excel in color, size of flowers and neatness of habit. The Cinerarias made a fine display, although the efforts in the way of recent improvements with different strains have been mostly directed to the increased size of the flowers, and, to make a gain in this direction, compactness of habit has been somewhat sacrificed. These large-flowered varieties mostly bloom early, and before the plants have made a good foundation of growth, so that the relatively small-flowered plants make the best specimens. The first honors in this class went to Mr. James Carthly, of Fairhaven, who showed some magnificent specimens, although the individual flowers were somewhat lacking in size.

The forced shrubs exhibited by the Bussey Institute included Forsythias, Lilacs, Philadelphuses, Spiræa Van Houttei, several Ericas and Ghent Azaleas. The new white Snapdragon which Mrs. Wood, of West Newton, exhibited at the meeting of the Carnation Society a few weeks ago, was shown again; and since it has been proved that this showy biennial can be forced, it is likely to be extensively grown for decoration wherever bold displays are required.

Among the cut Roses were splendid flowers of Paul Neyron, Magna Charta, General Jacqueminot and other Hybrid Perpetuals, shown by David Nevins, Esq., of Framingham, Massachusetts. Mr. A. Mackay, his gardener, can be congratulated on having grown as fine Roses of this class as were ever seen in a Boston exhibition. The flowers of Catherine Mermet, shown by Mr. Meade, of Dorchester, were exceedingly well done, and gave a new proof that this remarkable Rose was still holding, as it has done for almost a century, a leading place among the pink Tea Roses. Its one defect, that of a loss of color on maturing, does not appear in Bridesmaid, which is a sport from it, and some magnificent blooms of this flower were exhibited by Mr. Frank Pierson, of Tarrytown, New York, while some flowers of another sport from Catherine Mermet, The Bride, were shown in first-rate condition by Mr. Elliot, of Brighton, Massachusetts. It is to be observed that this variety has also the defect of turning yellowish as it comes to maturity, which accounts for the fact that is yielding to some extent to the Kaiserin Augusta Victoria. This last Rose, however, is a hybrid Tea, and, therefore, can hardly compete with The Bride for all-the-year blooming.

Mr. Nicholson, of Framingham, carried off the honors for a display of Carnations, while Storm King, Uncle John and Stuart, all of which failed, to some extent, to meet the expectations of their friends at the meeting of the Carnation Society, were here shown in remarkably fine condition by the Cottage Gardens, Long Island.

It was a pleasure to see such a fine display of hard-wooded plants. Dr. Weld's specimen of Acacia Drummondii, some seven feet high, with its long pendent racemes of bright yellow flowers, made a charming picture. In the same collection was the Heath-like Diosma capitata, with its heads of lavender-blue flowers; Eriostomon nerifolia, with its star-shaped bluish white flowers; the elegant Boronia heterophylla, with globular pink flowers, as well as Corræas and others. Two small plants of Boronia megastigma, from the gardens of Mr. John L. Gardener, filled the hall with their perfume, and from the same collection there was a magnificent standard plant of Acacia

pubescens, with a head six feet across, with drooping branches all tasseled with golden flowers. A young Orange-tree, which contained at once blossoms, green and ripe fruit, from N. T. Kidder's collection, was also very attractive, and Baürea rubioides, a handsome little shrub with pendent, pinkish, saucer-shaped flowers, from New Zealand, was new to most visitors.

Boston. *S.*

Notes.

One of the very best, if not the best, of Strawberries for forcing is the old but somewhat scarce variety Triomphe de Gand. It will fruit abundantly in four-inch pots and it is always a sure cropper under glass.

For a week or two past the sidewalk fruit-stands have been decorated with branches of Kalmia latifolia, its glossy green leaves being very effective in setting off the colors of oranges, bananas and apples. Leafy twigs of Wild Cherry are largely used during the summer for the same purpose, but these Laurel leaves have only lately come into such general use. The supply comes from the coast counties of New Jersey.

A series of excellent photographs of wild flowers, made by Mr. Cornelius Van Brunt, of this city, and colored by Mrs. Van Brunt, will be used as lantern slides to illustrate a lecture on Wild Flowers in and about New York City, which Mr. Van Brunt will deliver at Hardmann Hall, on Fifth Avenue and Nineteenth Street, on Wednesday evening, April 3d. The lecture has been already given before the Torrey Botanical Society, of this city, when it was highly commended, and it is to be repeated by request.

According to a writer in the *Youth's Companion*, the largest forest in the world is in Siberia, stretching continuously from the plain of the Obi River, on the west, to the valley of the Indighirka, on the east, and embracing the great plains or river valleys of the Yenesei, Olenek, Lena and Yana, the vast belt averaging more than one thousand miles in breadth from north to south, and some three thousand miles long. The trees are mostly coniferous, and they cover thousands of square miles, whose central regions no human being has ever visited. Long-stemmed conifers, rising to a height of one hundred and fifty feet or more, stand close together, and their dense lofty tops exclude the pale arctic sunshine, and the straight trunks, all looking exactly alike, bewilder the eye in the obscurity, so that all sense of direction is lost. Even the most experienced trappers dare not venture into these forests without blazing the trees constantly with hatchets as they walk forward, for a hunter lost there rarely finds his way out, but perishes from starvation or cold.

Mr. H. G. Hubbard, the entomologist of the Department of Agriculture, writes that the cold weather which desolated the gardens and Orange-groves of Florida, killed unnumbered millions of injurious insects. All cockroaches in sight, and even those in houses, unless they were exceptionally well protected, were killed. The young scale insects which had not passed their second molt were killed, although many eggs survive, and some adults of both sexes. The nitidulid beetles in decaying fruit were also killed, small gnats in flowers were frozen, and not a living colony of plant-lice is to be seen on any Orange or other tree. No living specimen of the destructive white fly, Aleyrodes Citri, was found, and as the eggs are laid on the leaves, every one of which will drop before the new growth appears, the cold wave would have almost exterminated this pest but for the fact that, besides the Orange-tree, it also infests the Cape Jessamine, and as the leaves of these plants have not all fallen, Mr. Hubbard is advising the orange-growers to cut down their Jessamines and burn them. Since the breeding of injurious insects has been suspended now for some weeks an excellent opportunity has been offered to clear the trees of scale with comparatively mild insecticides. On the other hand, the trees have been so enfeebled by the cold that they will be an easier prey to injurious insects than they were before.

Dr. E. F. Franceschi writes in the Santa Barbara *Press* that the Norfolk Island Pine, Araucaria excelsa, thrives remarkably well in that town, some of the older specimens being already more than one hundred feet high; most of them are now bearing cones which appear to ripen perfect seeds, so that in some places there are young plants growing from self-sown seeds—that is, the tree has become practically naturalized. A. Cookii, from New Caledonia, also bears cones there, while specimens of A. Bidwelli, A. Cunninghamii, A. Brasiliensis and A. imbricata are doing well, although none of them have flowered as yet. The most remarkable exotic conifer is, perhaps, the splendid specimen of Dammara, which was planted more than twenty years ago on what are now the grounds of Mr. E. H. Sawyer, at Montecito. The tree has never flowered, and until it does it can hardly be identified. Dr. Franceschi hardly thinks it is the true Kauri Pine, from New Zealand, Dammara australis, and it has been doubtfully referred to D. robusta, from Queensland, while others are inclined to consider it D. orientalis, from Java. An apparently different species of Dammara with broader leaves is to be seen in Carpinteria. Of true exotic Pines there is a specimen of Pinus maritima, from the Mediterranean basin, in Santa Barbara, which is now twenty-five years old, and some fine Stone Pines, Pinus Pinea. The pyramidal form of the Italian Cypress, Cupressus sempervirens, has been much planted, and there are splendid specimens of the Weeping Cypress, C. funebris, from China. Cedrus Deodara, C. Libani, Cryptomeria Japonica, C. elegans, Sciadopytis verticillata and several other Asiatic conifers have been planted recently, and all do well. Dr. Franceschi thinks there is no other place in the United States, and, perhaps, none in the world, where such a rich and instructive pinetum could be planted, since the conifers of widely different climates seem to thrive in Santa Barbara equally well.

Every year increases the demand for grape-fruit, as people will insist upon calling the pomelo, and those who have learned to appreciate its value as a breakfast fruit in winter feel that they have something like a personal grievance when they are deprived of it. It is an expensive luxury now, however, since almost the entire supply came from Florida, and, except the limited number of boxes picked before the holidays, the entire crop was destroyed by the killing frost at the beginning of the year. Small quantities of this fruit were brought from the West Indies a few years ago, but it could hardly be given away, and no attempt has been made to cultivate it systematically on any extended scale in those islands. A week ago a few barrels were brought in from Jamaica, and they sold at auction at $24.00 a barrel, the highest price ever realized for this fruit in New York. At retail a good pomelo costs half a dollar. As we have stated before, every orange-growing region of the world was laid under contribution as soon as the disaster to the Florida crop was known, and, therefore, the supply of this fruit is still overabundant, and oranges from Sicily can be bought here for less money than they bring in the groves where they were produced. Probably a hundred thousand dollars have been lost by the large dealers in this fruit in this city within a few weeks past. The supply of California Navel oranges, however, is now running low, and prices for fine fruit are growing more firm. The cold weather has retarded the growth of pineapples, so that the season is uncommonly late. Last week fifty-six barrels came into this port, and a year ago they were arriving at the rate of three thousand barrels a week. Of domestic fruits, pears are no longer quoted in the market reports, although in the fancy-fruit stores some of the best late winter varieties, like P. Barry, one of the long-keeping Fox seedlings, can be had at seventy-five cents a dozen. The apple supply is, of course, falling off. Ever since the middle of September this fruit has been coming into New York at the rate of about twenty thousand barrels a week. Last week, however, only six thousand arrived. Varieties, like Ben Davis, Northern Spy and Baldwins of good quality, bring at wholesale $4.50 a barrel, while choice Spitzenbergs, Winesaps and Greenings cost $6.00. Strawberries, from Florida, have fallen to fifty cents a quart, while choice berries from farther north can only be afforded by wealthy buyers. Asparagus, from Charleston, has been in fuller supply, and the price has dropped to $1.00 a bunch. Green peas sell at $5.50 a crate. The finest salad plants in the market now are dandelion and chicory, from New Jersey, and Romaine lettuce, for which last Bermuda gardens seem to have a monopoly in this market.

Mr. William S. Kimball, of Rochester, died on the 26th of March, after a brief illness, at Virginia Beach, where he was spending the winter. Mr. Kimball has long been known as one of the most liberal patrons of horticulture in America. In Orchids, especially, he took an enthusiastic interest and was known to all dealers in rare plants of this class. He bought with intelligence, and being a man of abundant means he had amassed a collection which in its completeness and in the value of its individual plants had few rivals in the world.